

**STATUS AND DISTRIBUTION OF PARAKEETS IN
PUNJAB AND SINDH PROVINCES OF PAKISTAN**



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Summary

This report is an outcome of surveys carried out for status and distribution of Rose-ringed and Alexandrine parakeets in the selected districts of Sindh and Punjab during the months of April and May, 2011.

The study was conducted with the collaboration of provincial wildlife departments of Punjab and Sindh and WWF-Pakistan provided financial assistance.

The objectives of the current study were to determine the status and distribution of Rose-ringed and Alexandrine parakeets in the selected districts of Sindh and Punjab provinces and to investigate the anthropogenic and natural threats to the species and their habitat. In addition measures for the conservation of both the species of parakeets and recommend actions to the Government for allocation of export quota of the species were also parts of the objectives.

During the current survey an approximate population density of 55127 Rose-ringed parakeets were observed from 13 selected districts of Punjab and only 18688 Parakeets were observed from the 15 selected districts of Sindh province. The highest number of Rose-ringed Parakeets was observed in district Faisalabad of Punjab i.e.1390 birds with approximate population of 10435 birds throughout the district. In Punjab the Alexandrine Parakeet was observed with an approximate population of 3961 birds in the province and the highest number of the parakeet was observed in District Kasure i.e. 573 birds with an approximate population of 2631 birds.

All the four species of parakeets were observed in Punjab i.e. Rose-ringed Parakeet (*Psittacula krameri*), Alexandrine or Large Indian Parakeet (*Psittacula eupatria*), Blossom - headed Parakeet (*Psittacula cyanocephala*) and Slaty-headed Parakeet (*Psittacula himalayana*). Whereas only single species of parakeets, the Rose-ringed Parakeet (*Psittacula krameri*), was observed from the selected districts of Sindh and the highest population density of Rose-ringed parakeet was observed in District Mirpurkhas (0.94 birds/ sq km).

According to Roberts (1991) the Alexandrine parakeet has been recorded from Ghotki and Sukkar Districts of Sindh bordering Punjab province but during the current study none of the Alexandrine or Large Indian Parakeet (*Psittacula eupatria*) was observed from these districts.

During the current study a general declining trend of Parakeets especially of Rose-ringed Parakeet was recorded in both the provinces of Pakistan.

The reasons of possible threats have been discussed in the report and recommendations have been given for the conservation of the parakeets in the country.

INTRODUCTION

Parakeets also known as psittacines comprise of 372 species in 86 genera that make up the order Psittaciformes. The order is subdivided into three families: the Psittacidae ('true' parrots), the Cacatuidae (cockatoos) and the Strigopidae (New Zealand parrots) (Christidis, 2008; Zoological Nomenclature Resource, 2008).

Parakeets are found on all tropical and subtropical continents including Australia, Oceania, South Asia, Southeast Asia, Central America, South America and Africa. Some Caribbean and Pacific islands are home to endemic species. By far the greatest number of parrot species comes from Australasia and South America. The lorries and lorikeets range from Sulawesi and the Philippines in the north to Australia and across the Pacific as far as French Polynesia, with the greatest diversity being found in and around New Guinea. Many parrots have been introduced to areas with temperate climates, and have established stable populations in parts of the United States (including New York City), the United Kingdom, Belgium and Spain. While a few parrots are wholly sedentary or fully migratory, most fall somewhere between the two extremes, making poorly understood regional movements, with some adopting an entirely nomadic lifestyle (Collar 1997; Butler 2005).

Escaped parrots of several species have become established in the wild outside their natural ranges and in some cases outside the natural range of parrots. Among the earliest instances were pet Red Shining-parrots from Fiji which established a population on the islands of southern Tonga. These introductions were prehistoric and Red-shining Parrots were recorded in Tonga by Captain Cook in the 1770s (Steadman, 2006). Escapees first began breeding in cities in California, Texas and Florida in the 1950s (with unproven earlier claims dating back to the 1920s in Texas and Florida) (Buttler C2005). They have proved surprisingly hardy in adapting to conditions in Europe and North America. They sometimes even multiply to the point of becoming a nuisance or pest, and a threat to local ecosystems, and control measures have been used on some feral populations (Collar, 1997)

Parrots are popular as pets due to their sociable and affectionate nature, intelligence, bright colours, and ability to imitate human voices. The domesticated Budgerigar, a small parrot, is the

most popular of all pet bird species. In 1992 the newspaper “USA Today” published that there were 11 million pet birds in the United States alone (Ward, 1992) many of them parrots. Europeans kept birds matching the description of the Rose-ringed Parakeet (or called the ring-necked parrot), documented particularly in a first century account by Pliny the Elder (2008) as they have been prized for thousands of years for their beauty and ability to talk.

The popularity of parrots as pets has led to a thriving—and often illegal—trade in the birds, and some species are now threatened with extinction. A combination of trapping of wild birds and damage to parrot habitats makes survival difficult or even impossible for some species of parrot. Importation of wild caught parrots into the US and Europe is illegal. The trade continues unabated in some countries. A report published in January 2007 presents a clear picture of the wild-caught parrot trade in Mexico, stating: "The majority of parrots captured in Mexico stay in the country for the into the USA (<http://www.defenders.org/programs>).

Many parrot species are in decline, and several are extinct. Of the 350 or so living species, 130 are listed as near threatened or worse by the IUCN (<http://www.iucnredlist.org>). There are several reasons for the decline of so many species, the principal threats being habitat loss and degradation, hunting and, for certain species, the wild-bird trade. Parrots are persecuted because, in some areas, they are (or have been) hunted for food and feathers, and as agricultural pests. For a time, Argentina offered a bounty on Monk Parakeets (an agricultural pest), resulting in hundreds of thousands of birds being killed, though apparently this did not greatly affect the overall population (Campbell, 2000). A study conducted in late 1990s on the International trade of Parrots listed by CITES found that 1.2 million parrots were exported between 1991 and 1996 with the majority of the birds coming from Neotropics. In India there is a ban on the bird trade but it can not be enforced every year 50,000 Parakeet chicks are collected and exported (Rosemary 2003).

In Pakistan all the Provincial wildlife departments provide special license to hunters for trapping the common bird's including Parakeets. The National Council for Conservation of Wildlife (NCCW) regulated the trade of wild fauna in the country, issued license to exporters for exporting the Parakeets from the country. According to documents of NCCW annually a quota of

25,000 parakeets especially of Rose-ringed Parakeets were awarded to bird dealers in the country to export the bird till 2007. In 2008 the NCCW imposed a ban on the export of Parakeets especially of Rose-ringed Parakeet on the assumption that parakeet population was decreasing throughout the country.

Considered as common bird in Pakistan all the species of Parakeets are ruthlessly hunted and exported from the country. The Parakeets are captured mainly by nets and other practices. The young birds especially the chicks are much valued in market and are removed from nests by using iron rod. Many of the chicks die due to carelessness of the hunters.

The current study of Rose-ringed (*Psittacula krameri*) and Alexandrine Parakeet (*Psittacula eupteria*) in the Provinces of Sindh and Punjab, have the following objectives

- To study the status and distribution of Rose-ringed (*Psittacula krameri*) and Alexandrine Parakeet (*Psittacula eupteria*) in the selected districts of Sindh and Punjab Provinces,
- To investigate the anthropogenic and natural threats to the species and their habitats,
- To suggest measures for the conservation of the species and
- To recommend to the Government allocation of export quota of the species.

PARAKEETS OF PAKISTAN

1. **Rose-ringed Parakeet (*Psittacula krameri*)**

The Rose-ringed Parakeet is yellow-green with a long tail lives in tropical and subtropical lightly wooded habitats feeding mainly on seeds, fruit, flowers and nectar. Males have a black and rose-red ring encircling their throat. This parakeet is sedentary, with some local movements for food and roosting. Breeds singly or in small loose groups in the same tree from late January to late July. Female lays two to six eggs and incubation time is 22 to 24 days normally single brooded, but known to occasionally have second broods. The young leave the nest about six to seven weeks after they hatch and average life span is 40 years.

It prefers to live in woodland and forest habitats and other wooded land (Mainly lowland, most abundant in moist and dry deciduous lightly wooded areas, secondary jungle. This species avoids mountainous and arid areas can be found in a large range of temperatures, precipitation and light regimes in anthropogenic-influenced habitats that provide food resources.

From west- to east-central Africa, Afghanistan, Pakistan, Indian Subcontinent, Myanmar. Rose-Ringed Parakeet is widely distributed throughout the Indian Sub-Continent and in Pakistan found throughout the plains and agricultural lands of the four provinces. Rose-ringed Parakeets are native to Africa and the Indian sub-continent, where they are considered to be one of the most significant agricultural Pests of fruits and grains (Butler 2003). Rose-ringed parakeet (*Psittacula krameri*) is most widely distributed in Pakistan and is widespread throughout the Indus plains; it ascends in the summer to Murree hills up to 914 meters (Roberts 1991) and is absent from extensive desert tracts and the northern foot hill regions.

2. **Slaty-headed Parakeet (*Psittacula himalayana*)**

The Slaty-headed Parakeet is slightly larger than the common Rose-ringed parakeet (*Psittacula krameri*). Like other species of the genus it has a bright grass green body, yellower on the breast and males have crimson-maroon patch on the wing shoulder.

This parakeet is also sedentary like Rose-ringed Parakeet, with some local movements and in winter they move around in the lower valleys and outer foot hills but do not extend down in to the plains. The breeding biology of this species is not much different from the other Parakeets except for its stronger predilection for nesting in colonies. Egg laying starts as early as April or late as

June and the eggs take about 24 to 26 days to hatch and the chicks about 7 or 8 weeks to fledge (Roberts 1992).

The Slaty-headed Parakeet (*Psittacula himalayana*) is adapted to mountainous regions and inhabits higher elevations. They are associated with Himalayan moist forest. In Pakistan they can be found around Murree and Margalla hills in winter season and also in Kaghan valley and lower Swat. In winter they move around in the lower valleys and outer foot hills but do not extend down into the plains. They have been seen feeding in flocks on the downy seeds of *Populus ciliata* and flowering racemes of *Pistacia intergerrima* in mid April (Kao forest Donga Gali) also eating the rind off green walnuts (*Juglans regia*) (Roberts, 1991).

3. Plum-headed Parakeet (*Psittacula cyanocephala*)

This is the smallest of the long tailed parakeets. With a bright grass green body, they can be easily recognized in the flight by the darkened head of both the sexes and the white tips to the tail. They are more frugivorous parakeets than the other species and they also eat nectar bearing flowers. They prefer small seeds of tall herbs and weeds to large grains. Generally this species sticks to well wooded areas and forest and does not feed in the ground as often as *Psittacula krameri*. They are sympatric with *Psittacula himalayana* in feeding habit. They are destructive of apricots (*Prunus armeniaca*) in the orchards and also eat wild fruits of the fig as well as zizipus in season.

The Blossom-headed parakeet (*Psittacula cyanocephala*) is also very restricted in distribution in Pakistan and occurs in lower Murree Foothills and with some parts of the population dispersing to Jehlum to Sialkot District. It has not been noted above the subtropical pine zone north-west of Murree in similar sub tropical pine zone which stretches across Hazara District.

4. Alexandrine or Large Indian Parakeet (*Psittacula eupatria*)

This is the largest of the Indian parakeets, with the prominent maroon-red shoulder patch. The powerful bill, forming a semi-circular arc along the culmen of upper mandible, being deep crimson with a paler orange-red tip. Its body is bright grass green than typical specimens of *Psittacula krameri*.

The Alexandrine Parakeet is found in S India and Sri Lanka, Afghanistan and Pakistan, through N India to Bangladesh. This parakeet is very restricted in distribution in Pakistan and largely local and sedentary in the better wooded parts of Punjab extending to the sub-tropical pine zone (*Pinus roxburghi*) in the Murree foothills, where it is resident. Small colonies can be observed in Kohat (KPK) and Obbaro Sindh bordering Southern Punjab. They are very fond of the flowers and flower buds such as nectar bearing trees as *Salmalia*, *Bauhinia*, and *Erythrina*, eating the petals as well as the nectarines. They eat a variety of seeds, fruits and vegetables.

Rather territorial, roosting each night in the same tree grooves and keeping in small flocks or family parties throughout the year. They have loud carrying calls and indulge in much calling when flying around both between feeding places and before settling down in their night time roosts. This aggressive bird has a prolonged courtship period involving a lot of appeasement gestures. They lay their eggs in tree cavities and this is usually between February and March in southern Punjab. Female lays three to four eggs and incubation time is 21 days or longer. The young's leave the nest about 8 weeks after hatching.

MATERIALS AND METHODS

The field surveys were undertaken by the technical staff of the Punjab and Sindh Wildlife Departments. Meetings were held with staff of Punjab and Sindh Wildlife Departments to finalize the study sites and survey team composition. The surveys were carried out from end April till mid-May, 2011. Two surveys Performa were used. One contained different questions regarding the status of parakeets, business and conservation suggestions while the second performa was to record data about parakeets abundance. Binoculars (Olympus 8-16x40, DPS-I) were used for identification and counting of parakeet species. GPS points of the study sites were also marked.

Study Area

For the current study 29 Districts from Sindh and Punjab Provinces including Islamabad were selected. Thirteen Districts i.e. Sialkot, Kasur, Bahawalpur, Rahimyar Khan, Multan, Kahanawal, Faisalabad, Attock, Khushab, Sargodha, Chakwal Districts, Lahore and Murree Foothills were studied in Punjab province, and fifteen districts i.e. Sanghar, Badin, Hyderabad, Larkana, Mirpur Khas, Sukkar, Thatta, Tando Allahyar, Khairpur, Ghotki, Nawabshah, Shikarpur, Noushehro Feroz, Matyari and Tando Muhammad Khan were studied in Sindh province.

Two survey methods meant to provide approximate population data were adopted for the study. These included “Line Transact and Point Count Methods”.

1. Line Transect Method:

This method entailed walking a predetermined line, counting the observed species and recording the distance at which they are seen or flushed. The average of the flushing distance was determined and used to calculate the effective width of the strip covered by the observer. The population for the entire area was then considered to be the number of animal observed divided by the area of the strip and multiplied by the total area. Transects of 1km x 400m were taken after every 5 km in the areas of occurrence of Parakeets. The Parakeets within 200 meter width on both the sides were counted. Then by applying the under mentioned formula, the population of parakeets of the total survey area was estimated.

$$P = AZ / 2YX$$

Where

P = Population

A = Total Area of Study

Z = Number flushed

Y = Average flushing distance

X = Length of strip

2. Point Count

To cross check the population status point count methods were used at specific sites with the consultation of local people. In this method a certain point is selected where maximum number of birds can be observed in a specific time. The Parakeets use a specific roosting site so this method is most favorable for observing maximum number of parakeets in a roosting site.

Local community was interviewed for information regarding the parakeets and questionnaire was also filled with the provided information i.e. hunting and trade of the species in the area. Survey of local markets for bird sale points was also conducted to explore the trade of the parakeet species.

The collected data was communicated to Zoological Survey Department from Punjab and Sindh Wildlife Departments. The data was then analyzed and computed to get final results regarding status of Rose-ringed and also other parakeets found in the Punjab and Sindh.

RESULTS AND DISCUSSION

In Pakistan no documented study is available on status and distribution of the parakeets except Roberts (1991). Few studies including feeding behavior of parakeets in Guava, Sunflower and maize fields and roosting and feeding behavior of Rose-ringed Parakeet in Central Punjab have been carried out (Ahmed, 2006; Iqbal 1998; Iftakhar *et al.*, 1991; Khan and Iftikhar 1990; Khan 2002). If we refer all the studies in Pakistan Rose-ringed Parakeet has been given the status of a common crop pest.

On the basis of the current study the Parakeets were observed distributed in both the provinces i.e. Punjab and Sindh, The approximate number of both the Rose-ringed and Alexandrine parakeets were recorded from the selected districts of Punjab i.e.59088 birds. In Punjab all the four species of parakeets were observed. Here the maximum population density of parakeets was observed from District Faisalabad i.e. 1.782 of Rose-ringed parakeets /sq km and District Sargodha 1.6 Rose-ringed parakeets/ sq km.

Table 1 Population of Rose-ringed Parakeet in Punjab Province

S.No	District	Area km	Surveyed Area	No. of Parakeets Observed	Density/km	Estimated Population
1	Rahim yar Khan	11880	830	190	0.289	2719
2	Multan	3721	150	40	0.266	992
3	Bahawalpur	24830	800	87	0.108	2855
4	Khanewal	4349	250	160	0.64	2783
5	Kasore	3995	870	945	1.2115	4840
6	Lahore	1772	268	215	0.94	1666
7	Sialkot	3016	680	1484	2.182	6581
8	Chakwal	6609	265	80	0.301	1995
9	Sargodha	5854	900	1500	1.6	9756
10	Faisalabad	5856	780	1390	1.782	10435
11	Rawalpindi	5286	790	567	0.717	3793
12	Isalmabad	906	450	855	1.9	1721
13	Khushab	6511	750	575	0.7666	4991
Total						55127

The Alexandrine Parakeets which is commonly kept as pet was found fairly distributed in the districts bordering India like Kasore, and Lahore. The highest number of Alexandrine parakeets was observed in district Kasore i.e. 573 birds and the population density of 0.413 birds /sq km and the approximate population estimate was 3961 birds throughout the province.

Table 3 Population density of Alexandrine Parakeet in Punjab Province

S.No	District	Area km	Surveyed Area	No. of Parakeets Observed	Density/km	Estimated Population
1	Rahim yar Khan	11880	830	0	0	0
2	Multan	3721	150	10	0.06	248
3	Bahawalpur	24830	800	15	0.018	465
4	Khanewal	4349	250	6	0.024	104
5	Kasure	3995	870	573	0.658	2631
6	Lahore	1772	268	17	0.06	112
7	Sialkot	3016	680	2	0.002	08
8	Chakwal	6609	265	0	0	0
9	Sargodha	5854	900	0	0	0
10	Faisalabad	5856	780	84	0.1076	630
11	Rawalpindi	5286	790	85	0.1075	568
12	Islamabad	906	450	0	0	0
13	Khushab	6511	750	20	0.026	173
Total						3961

All the four species of parakeets were recorded from Punjab province (including Islamabad) and consisting of 59088 Rose-ringed and Alexandrine parakeets. The four species of Parakeets were observed in District Rawalpindi.

The Slaty-headed and plume-headed parakeet were observed in good numbers in Murree Biodiversity Park near Chitta Morr Murree (District Rawalpindi) i.e. 348 and 27 respectively. The three species of parakeets the Rose-ringed, Slaty-headed and plume-headed were observed in a single habitat in District Islamabad. The habitat consisted of mixed trees of Kikar, Berry, Sheesham and fruit trees of Chikoo, Guava, Date palm and Mango.

A total of 18688 Rose-ringed Parakeets were observed in Sindh Province whereas Roberts (1991) had observed a single flock of Rose-ringed Parakeets consisting of 3000 birds feeding on maize crops in District Umerkot, Sindh. In Sindh highest population density of Rose-ringed parakeet was observed in District Mirpurkhas (0.94 birds/sq km).

Roberts had also recorded Alexandrine Parakeet in Sindh province from districts of Ghotki and Sukkar districts bordering Punjab but none of the species were observed in current study from both the districts of Sindh.

If we compare our results with that of Roberts (1991) the Parakeets, especially Rose-ringed Parakeets in different parts of the country, a significant decrease can be noted in Sindh and Punjab provinces. This decrease can be attributed to different factors like hunting, loss of habitat and export.

Table 2 Population Density of Rose-ringed Parakeet in Sindh Province

S.No	District	Area km	Surveyed Area	No. of Parakeets Observed	Density/km	Estimated Population
1	Thatta	17361	1110	245	0.22.7	3831
2	Badin	6726	680	80	0.117	791
3	Hyderabad	3198	540	78	0.144	460
4	Matyari	1417	220	93	0.422	599
5	T. M Khan	1733.99	370	127	0.3432	595
6	Nawabshah	4239	455	94	0.206	875
7	Khairpur Mirs	15910	425	73	0.171	2732
8	Naushero feroz	2946	625	133	0.2128	626
9	Sanghar	10728	560	123	0.2196	2355
10	Sukkar	5156	360	55	0.1527	787
11	Shikarpur	2512	355	73	0.205	516
12	Ghotki	6083	380	62	0.163	992
13	Larkana	2866	250	53	0.212	607
14	Mirpur Khas	2925	250	235	0.94	2749
15	Tando Allahyar	965	150	27	0.18	173
Total						18688

THREATS TO PARAKEETS IN PAKISTAN

1. Export

Due to worldwide export demand, parakeets are continued to be trapped and exported. No research has been carried out to evaluate the parakeet trade and its sustainability. Keeping in view the export demand for parakeets the Government of Pakistan granted the export quota of about 25000 parakeets annually through National Council for Conservation of Wildlife (NCCW) until 2008.

Mass level trade in Parakeets brought a sharp decline in the Parakeet population in the country. Keeping this fact in view the NCCW imposed a ban on Parakeet trade. A media article (Dawn 26 July, 2010) highlighting the issue that the ban has been imposed without any population census in the country. Our study revealed that the population of Parakeets especially of the Rose-ringed Parakeets is declining in the country. The quotas which were allocated for export were not based on sustainable harvesting of the current Parakeet population, it severely affected Parakeet population.

According to local hunters, common people and market surveys it was observed that thousands of Parakeets are annually captured and exported. While visit of the Empress Market of Karachi, which is the largest bird selling Market of Pakistan, it was surfaced that the Parakeet catch has decreased during last decade. A decade ago 50,000 to 70,000 Parakeets were annually brought for sale from different parts of the country and now only 10,000 to 14,000 birds reach for sale (Sindh Wildlife Department). During the current survey the annual catch of parakeets especially of Rose-ringed was recorded 200 to 3000 birds and each hunter traps 30 to 200 birds throughout the year in each District of Punjab. In Sindh 30 to 300 birds are captured per hunter and 250 to 2000 birds are captured from each district throughout the year.

The people who are involved in hunting are mostly professionals but some agriculture labourers are also involved in parakeet hunting part time. The Rose-ringed Parakeet was the most captured species in both the provinces. These birds are locally sold to middleman or in local markets.

The adult Rose-ringed is sold for rupees 100 to 540 and adult Alexandrine Parakeet is sold for rupees 2000 to 5000. Whereas, it was recorded the chicks of both the species are highly priced

than that of adult ones due to their quick learning capacity. The chick of Alexandrine parakeet is sold from 3500 to 6000 rupees and the chick of Rose-ringed is sold from 500 to 1000 rupees.

2. Habitat destruction:

Habitat loss was also recorded as one of the most threatening factors for decline in Parakeet population. Almost all the four species of Parakeets make their nest or occupy the nest of other bird species in the old tree holes. The deforestation is common practice throughout the country and mostly old trees are ruthlessly cut down for wood, timber and other purposes. Thus the roosting and nesting sites of Parakeets are shrinking day by day which may have negatively affected its population.

3. Being Kept As Pet:

The Parakeets are famous pet birds and it is the main reason for their export. The young birds are most favorite for this purpose because they can be easily trained to mimic the voice of human or any thing else. The young birds are taken away from nest by hunters and this baby bird is primarily fed with boiled pulses to grow.

The adult birds are captured by net and a net is put around a tree in the roosting site. This practice is carried out in evening time when the birds return back to their roosting sites and thus many birds get trapped in the net.

According to Market surveys in Rawalpindi the Alexandrine chick is sold for Rupees 8000/ bird, while the chick of Rose-ringed is sold for Rupees 1500 to 2000 depending on its sex. The adult of Alexandrine is sold for rupees 12000 to 16000/bird. The male Rose-ringed is sold for Rupees 1000 and the female in Rupees 500/bird.

4. Considered as crop pest:

According to Shwartz 2007, Rose-ringed Parakeet is considered by some to be the worst avian pest in its native range. It is a major crop pest in India, damaging grain products and fruits and, in one study, reducing the yield of maize crops by up to 81%. It is also a pest of sunflower, dates and other fruit orchard crops.

In Pakistan some studies have been carried out on its predation upon crops (Khan *et al.*; 2006; Bashir, 1978) which suggest that Parakeets mostly the Rose-ringed Parakeet cause

considerable damage to crops like maize, sunflower, oil seed crops like mustard and canola, apart from a variety of orchards like guava farms and berries *Zizipus jujuba*. The parakeets feed upon ripen seeds of cereal crops and also on different types of fruits. This habit makes the Parakeets anti farmer. The farmers use to cut down the old trees in the vicinity of their fields and thus reduce their roosting and nesting sites which may also affect its population.

RECOMMENDATIONS

- No census ever has been conducted on parakeet population in Pakistan. Country level census for Parakeets should be executed to determine population and status of all the species of parakeets including study of habitat.
- Export and other illegal smuggling of parakeets should be strictly monitored and ban on exports of parakeets may not be lifted till country level data is not obtained.
- Short term and long term programmes may be carried out for monitoring of populations and trends of populations of parakeets in the country.
- Local level community organizations may be formed with alternate livelihood options to protect avifauna including parakeets.
- The provincial wildlife departments may refrain from issuing license for all and sundry for catching common birds especially the Parakeets.
- Provincial Wildlife staff may be facilitated to enforce the wildlife laws so the illegal hunting of birds including parakeets may be stopped.
- Stricter control and monitoring on bird trade within Pakistan and export to other countries may be strictly imposed.

Population Status of Parakeets in Selected Districts of Sindh

S.No	District	Rose-ringed Parakeet	Observed Nos	Name of Area	Coordinates
1	Thatta	Do	245	Haleji Lake	N 24 47 234 E 67 45 444
				GujjoMori	N 24 44572 E 67 46421
				Saeedpur	N 24 37 223 E 68 01 821
				Sajjawal	N 24 36 074 E 68 04144
				Jol kat jhakro	N 24 34 902 E 68 07 801
2	Badin	Do	80	GothBilawal Khan	N 24 39163 E 68 38214
				Goth Korejo	N 24 39334 E 68 40723
				Koli kot	N 25 02 767 E 68 39 051
				Talhar	N 24 45 90 E 68 48 698
				Matli	N 25 06 095 E 68 35 353
3	Tando Allahyar	Do	27	Machi Goth	N 25 27 014 E 68 37 076
				Moula Bux Marri Farm	N 25 28 708 E 68 46 364
4	Tando Mohammad Khan	Do	127	Goth Peeyalabad	N 25 06585 E 68 34855
				Pattar Goth	N 25 07 862 E 68 832996
				Khattar	N 25 14339 E 68 826992
				Nohani Goth	N 25 17 743 E 68 24 857
				Shah Wari	N 24 56 512 E 68 42 152
5	Hyderabad	Do	78	Hala Naka	N 25 24820 E 68 23442
				Mirpur Naka	N 25 20692 E 68 824498
				Kalyari Goth	N 25 24885 E 68 824498
				Tando Qaiser	N 25 22 817 E 68 01 249
				Keesana Moori	N 25 26 682 E 68 35 008
				Talpur Goth	N 25 29 035

6	Matyari	Do	93		E 68 41 047
				Talpur Farm	N 25 29 766 E 68 39 674
				Haji Bakar Goth	N 25 31574 E 68 36 649
				AllahWarayo Bharejo Goth	N 25 34 681 E 68 36 273
				Uddero Lal	N 2538 580 E 68 35 642
7	Mirpurkhas	Do	235	Sindh Horticulture Farm	N 25 30 968 E 68 59 685
				Syed lakho Shah Farm	N 25 28 233 E 69 01 885
				Lashari Farm	N 25 30 939 E 69 03 104
				Rajhar Farm	N 25 32 751 E 69 02 492
				Sindhri	N 25 39 201 E 69 05 954
8	Sanghar	Do	123		N 25 57 889 E 68 58 385
				Jhol Sahdadpur	N 25 56 821 E 68 51 859
				Haji Bari Bughti Goth	N 25 56 381 E 68 40 405
				Syed Fayaz Hussain Shah Farm	N 25 55909 E 68 38 982
				Naz Latif Goth	N 25 56 227 E 68 38 505
9	NawabShah	Do	94	Dorr	N 26 28778 E 68 18 787
				Pai Forest	N 26 12660 E 68 25681
				Ali abad Goth Stop	N 26 12580 E 68 31440
				Sakrand	N 2613839 E 68 27361
				Jamal Shah Goth	N 26 17987 E 68 22405
10	Noshehro Feroz	Do	133	Kandiario	N 27 04083 E 68 14902
				Kotri Kabeer Farm	N 27 08039 E 68 21484
				Goth Latif Ali	N 27 58374 E 68 12033
				Bhria	N 26 55139 E 68 11646

11	Khairpur Mirs	Do	73	Faiz Gunj	N 26 44589 E 68 19786
				Pakka Chang	N 26 52306 E 68 20987
				Rassol Bux Mnagri Goth	N 27 24508 E 68 34801
				Waris khambi Goth	N 27 34198 E 68 44845
				Theiri Bypass	N 27 05741 E 68 46707
12	Sukkar	Do	55	Goth Patni Rohri	N 27 39073 E 68 52368
				Kandhra	N 27 36668 E 68 52992
				Rohri Nara Canal	N 27 39754 E 68 51334
				Mando Dero	N 27 41299 E 68 57482
				Jaskani Goth	N 27 52594 E 69 07922
13	Shikarpur	Do	73	Allah Dino Jafri Goth	N 27 55880 E 68 39363
				Nawab Khan Dall Goth	N 27 49564 E 68 37791
				Dawood Jee Wandh	N 27 48452 E 68 32632
				Muddeji	N 27 43939 E 68 27624
				Karan Sharif	N 27 56766 E 68 36356
14	Ghotki	Do	62	Ruk Farm	N 27 57174 E 69 14526
				Ghotki Bypass	N 28 00592 E 69 20469
				Sarhad Game Reserve	N 28 02335 E 69 29042
				Mirpur Mathelo Bypass	N 28 01733 E 69 33041
				Kori Jokho	N 28 02044 E 69 36643
15	Larkana	Do	53	Naudero	N 27 33902 E 68 13933
				Khaiber Pul	N 27 25850 E 68 16754
			Grand Total= 1551		

Population Status of Parakeets in Selected Districts of Punjab

S.No	District	Parakeet Species	Observed Nos;	Name of Area	Coordinates
1	Raheem Yar Khan	Rose-ringed	190	Wildlife Park	N: 282412.0 E: 701537.1
				Abbasia Town	N: 282623.7 E: 701810.2
				Head Amingarh	N: 282712.3 E: 701800.0
				Chak Abbas	N: 282922.7 E: 701817.9
				Basti Gardaspur	N: 283110.2 E: 701754.1
		Total	190		
2	Bahawalpur	Rose-ringed	87	Sadiq Public School	N: 292258.6 E: 713850.2
		Alexandrine	15	Intermediate Board	N: 292240.7 E: 713812.7
		Total	102	Irrigation Offices & Colony	N: 292254.4 E: 713844.0
3	Multan	Rose-ringed	40	Dunyapur Road	N: 300929.4 E: 713056.3
		Alexandrine	10	Dunyapur Road	N: 300646.9 E: 713239.3
		Total	50	Lahore by Pass	N: 301054.1 E: 713411.2
				Vehari Road by Pass	N: 300727.3 E: 713144.4
4	Khanewal	Rose-ringed	160	Wildlife Park Zoo	N: 302041.8 E: 720204.4
		Alexandrine	6	Wildlife Park Zoo	N: 302045.6 E: 720204.3
		Total	166	Wildlife Park Zoo	N: 302100.6 E: 720211.6
5	Kasure	Rose-ringed	945	Changa Manga Forest Head	N: 310530.1 E: 740102.3
		Alexandrine	573	Changa Manga Forest Lake	N: 310415.5 E: 745902.2
		Total	1518	Rest House Forest Department	N: 310349.3 E: 745816.4
6	Lahore	Rose-ringed	215	Jallow Park Wildlife Zoo	N: 313416.4 E: 742844.7
		Alexandrine	17		
		Plume-headed	20		
		Total	252	Jallow Park Wildlife Zoo	N: 313403.0 E: 742854.2
				Jallow Park	N: 313428.1

				Wildlife Zoo	E: 742312.8
7	Sialkot	Rose-ringed	1484	Peer Murdabad Purana Qila	N: 322940.0 E: 743229.4
		Alexandrine	2	Near Cantt	N: 323028.1 E: 743449.8
8	Faisalabad	Total	1486		
		Rose-ringed	1390	Breeding Centre Wildlife	N: 312348.7 E: 731237.7
		Alexandrine	84	Wapada City Town	N: 312853.8 E: 731310.0
		Total	1474	Choki Chak Jumrah	N: 313138.4 E: 731811.5
				Ayub Research Centre	N: 312000.4 E: 730124.7
9	Chakwal	Rose-ringed	80	Dhok Sella	N: 324752.5 E: 724331.5
		Plume-headed	20	Khokar Zer Village	N: 324945.5 E: 725115.3
		Total	100	Khokar Zer Dam	N: 324346.4 E: 725139.1
				Wariavil village	N: 325017.4 E: 725120.5
10	Rawalpindi	Rose-ringed	567	Chitta Morr	N: 33 5442.3 E: 73 239.42
		Plume-headed	27	Murree	
		Alexandrine	85	Barroha	
		Slaty-headed	348	Kathar	
		Total	1027	Angoori	
11	Sargodha	Rose-ringed	1500	Chak Muhammad Khan Jahanabad	N: 32 11 963 E: 72 26 299
				Jalal Mandar	N: 32 18 049 E: 72 34 797
				Chak Shumali 82	N: 32 06 337 E: 72 32 788
				Shahpur	N: 32 16 531 E: 72 27.752
		Total	1500		
12	Khushab	Rose-ringed	575		N 32° 33' E 72° 01'
		Alexandrine	20		
		Total	595		
13	Islamabad	Rose-ringed	560	Jabbi Gekhran	N: 33 34 570 E: 73 16 508
		Plume-headed	45	Nara Syedan	N: 33 34 765 E: 73 17 275
		Slaty-headed	250		
		Total	855		
		Grand Total	9315		

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